



## Eliminating Toxic Chemicals While Improving System Cleanliness

### CUSTOMER PROFILE

The Mission of the Department of Ecology is to protect, preserve, and enhance Washington State's environment, and promote the wise management of the air, land, and water for the benefit of current and future generations. In order to fulfill their mission and move Washington forward in a global economy, the Department of Ecology has three goals:

- Prevent pollution
- Clean up pollution
- Support sustainable communities and natural resources

### PROBLEM

Traditional water treatment chemicals are blown down to the sewer and must be processed by wastewater facilities. As a steward for the environment and in order to save money, the Washington State Department of Ecology Headquarters wanted to reduce the amount of water consumed by their cooling system and eliminate all cooling tower chemicals.

### RESULTS

While keeping the same service company to maintain their cooling system, the DOE has realized significant water savings and doubled their cycles of concentration resulting in significant water savings. The water is crystal clear, there is no new scale formation, bacteria counts are extremely low, and corrosion rates on the galvanized tower are also low. They no longer use any chemicals in the cooling tower. Water that is blown down the drain is now merely concentrated city water. Monthly maintenance has also been reduced providing trouble-free operation. Between the daily monitor reports and monthly service reports, system operators have the transparency they need to know that their system is functioning properly even with frequent power outages.

### CUSTOMER STATEMENT

"So far [the system] has been trouble free. We are using no chemicals which makes my job easier. I am satisfied with what it is doing."

- S.A., Facilities Manager

### APPLICATION

4" Wave and Tower Sentry Monitor on 200 Ton cooling tower

### SOLUTION

The Department of Ecology installed a 4" Wave non-chemical water treatment unit manufactured by General Water Systems on the main condenser line of the cooling tower. Before startup, the engineers at General performed a comprehensive water analysis and provided new settings for the existing conductivity controller. Because power outages are common, and in an effort to improve service between visits, a Tower Sentry Monitor was installed to send daily status reports and instant alarms every time power is interrupted or if other aspects of the cooling system or water treatment system fail.



General Water Systems' Wave Reaction Chamber



General Water Systems' Sustainable Water Treatment



Checking System Corrosion Rates with the Use of a Coupon Rack

